



# Research Program

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### Problem Definition

Research provides a basic understanding of the underlying physical, chemical, biological, sociological and technological processes that form and affect the Puget Sound ecosystem. This understanding of Puget Sound and its associated watersheds is essential for evaluating and adapting management actions to protect the Sound in the future.

Research discoveries have their most positive and timely effect when they are communicated to people who can use the information. Too often, research results are disseminated to limited audiences within the scientific community, or in a form or time frame that prevents their usefulness to resource managers, policy-makers and the general public. The Puget Sound Research Program attempts to address this problem by calling for efforts to translate and disseminate research information.

Research in the Puget Sound region has typically consisted of a patchwork of single organization-sponsored, short-term studies. When coordinated research projects do occur, they often lack a basin-wide focus. The *Puget Sound Management Plan's*

research strategy and program elements reflect an attempt to move beyond reactive, narrowly focused (e.g., "single-species") research and management perspectives to a broader consideration of systems, and specifically, to provide a research focus on the Puget Sound ecosystem.

### Institutional Framework

The Research Program is intended to meet society's expectations of highly focused, applied research that helps to solve the complex problems of environmental protection and restoration. The program attempts to (1) ensure that the effort and resources devoted to research are appropriate to and commensurate with problems that are confronted in protecting and restoring the biological health and diversity of Puget Sound and (2) ensure that the results of research are understood and incorporated into the decision-making process at all levels.

The Research Program supports and complements other management plan programs—such as the Estuary Management Program and other programs that address pollution sources and protection of resources. Through an adaptive manage-

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### What does "shall" mean?

The Action Team has determined that the actions in this plan are needed to protect and restore Puget Sound. Consistent with the importance of these actions, this plan says that appropriate implementers "shall" perform the actions. However, implementation of many of these actions is a long-term process. The Action Team's work plans will identify the actions that need to be taken each biennium to implement this management plan. Implementation of actions in the work plans is subject to the availability of funds and public input into the decision-making processes of implementing entities. When an action is included in a biennial work plan, the Action Team expects that it will be implemented in accordance with the relevant provisions of the Puget Sound management plan, in accordance with Chapter 90.71 RCW.

ment feedback system, research can be directed to address questions raised by management programs and can provide information about the validity of the management plan programs' underlying assumptions and the effectiveness of programs and individual actions.

The Research Program is closely aligned with the management plan's Monitoring Program. Research studies can explore findings made through monitoring to identify causes of problems and relations among the complex array of factors that affect conditions in Puget Sound. In addition, research helps develop accurate, practical and cost-effective methods for monitoring and analyzing samples.

The design of the Research Program acknowledges and builds upon other efforts to coordinate research. Several regional and national research coordination efforts support and complement the Research Program.

The University of Washington has undertaken a research and educational effort termed the "Puget Sound Regional Synthesis Model" to develop and maintain a dynamic and integrated understanding and description of the environmental and societal factors that will shape the Puget Sound region as it moves into the 21st century.

In 1993, the National Oceanic and Atmospheric Administration (NOAA) and the Environmental Protection Agency (EPA) established the Pacific Northwest Regional Marine Research Program (RMRP) to identify research needs and set priorities for research in the region encompassing Washington, Oregon and part of northern California. With funding, the RMRP would serve as a program of ecosystem-oriented research to coordinate existing efforts and fund new research. Unfortunately, the RMRP has not been funded and the need for a coordinated regional research program still exists.

In 1999, NOAA, EPA and the U.S. Geological Survey proposed a coastal research and monitoring strategy. The proposed strategy recommends a coastal research program that would (1) identify priority regional and national issues that need additional research to improve future integrated assessments and (2) develop interagency opportunities for soliciting, reviewing and supporting research proposals targeted to priority needs. As of the middle of 2000, this strategy has not been adopted in final form and has not received federal funding.

### Program Goal

To establish and maintain a system of priorities and funding for, and dissemination of, research that adds to our knowledge of the physical and biological systems of Puget Sound, identifies causes and solutions of pollution problems, and assists decision-making activities of regulatory and management agencies while stimulating creativity and excellence in research.

### Program Strategy

The strategy for achieving this goal is to:

- a. Maintain the Puget Sound Research Program in order to promote the coordination and funding of Puget Sound research;
- b. Maintain a renewable list of priorities for the program; and
- c. Assist in making the results of research available for use in making decisions.

[Note: Portions of the Research Program are identified in elements of other programs of the *Puget Sound Management Plan*, including the Wetlands and Habitat Protection Program, the Nonpoint Source Pollution Program, the Shellfish Protection Program, the Spill Prevention and Response Program, and the Stormwater and Combined Sewer Overflows Program.]

### **R-1. Puget Sound Research Program**

The Puget Sound Water Quality Action Team shall maintain the Puget Sound Research Program in order to provide a regional focus for the setting of research priorities, research sponsorship and the dissemination of research findings related to Puget Sound and its watersheds. This task shall be carried out with the assistance of a Research Advisory Committee composed of representatives from academic institutions; state, federal, regional and local agencies; the business and consulting community; and private research organizations.

The Action Team shall ensure that Puget Sound research and monitoring activities are coordinated. This includes reviewing the integrated technical report of the Puget Sound Ambient Monitoring Program (PSAMP) to identify research needs related to developing analytical and sampling methodologies or investigating questions raised by the monitoring results. In addition, the program shall coordinate, to the greatest extent possible, with other

research and monitoring efforts, including the National Oceanic and Atmospheric Association's programs (Northwest Fisheries Science Center studies, activities of the Pacific Northwest Restoration Center and the National Estuarine Research Reserve, and the National Marine Sanctuary Program), the Pacific Northwest Regional Marine Research Program, watershed monitoring programs, the Timber/Fish/Wildlife Agreement process, and other grant programs.

### ***R-1.1. Puget Sound Research Priorities***

The Research Advisory Committee shall review, revise and recommend to the Action Team a list of research priorities to serve as a guide to the Action Team in decisions to fund research pertinent to Puget Sound. The advisory committee shall consider needs and priorities for research identified by other research and monitoring programs, such as the Pacific Northwest Regional Marine Research Program and the PSAMP, by other management plan programs, and by other conservation, recovery and management plans and activities, such as salmon recovery plans, marine fish conservation plans, the Washington State aquatic nuisance species management plan, and action plans of the Puget Sound/Georgia Basin International Task Force and the Northwest Straits Commission and its marine resource committees. The Action Team shall encourage agencies, industry and other organizations that fund research to consider the list of research priorities in their own processes for allocating research funds.

### ***R-1.2. Puget Sound Research Grants***

The Action Team shall establish and manage a competitive program for research grants to support high-priority research that is not adequately funded by government agencies or other sources. The Action Team shall seek funding for research projects and award grants biennially based on the recommendations of the Research Advisory Committee. In making its recommendations, the committee shall evaluate project quality, significance of the project's expected scientific contribution, and importance of the project to an affected Puget Sound resource. The Action Team shall pursue the development of a permanent and stable funding base from industry and other private sources as well as from federal and state entities for support of the Research Program, including basic or process-oriented research that may not be with-

in a particular agency's mission but that is required to understand and use the results of applied research.

The Action Team shall seek to fund two students each year to enable them to pursue research related to Puget Sound resources and water quality issues.

Support to scientists for research shall include appropriate funding and encouragement to ensure that research findings are communicated and translated into a form that is usable by decision-makers. This should be accomplished through prompt publication of research reports (including short, non-technical summaries containing implications for management issues) in technical journals and in publications that are accessible to local government planners, agency staff and others.

### ***R-1.3. Dissemination of Research Results***

The Action Team shall support timely dissemination and translation of Puget Sound research results useful to the public and resource managers. Specifically, the Action Team shall:

- a. Sponsor conferences on Puget Sound research that include presentations on current research, discussion of the implications of the research, and an assessment of research priorities for the coming year;
- b. Sponsor technical forums for discussion of the scientific interpretation and management implications of research results; the forums should be designed to increase communication among researchers, resource managers, and other decision makers;
- c. Communicate and provide educational opportunities to increase public understanding of the ways in which research contributes to the resolution of current and future issues related to water quality in Puget Sound;
- d. Establish a policy that research supported by the Puget Sound Research Program should undergo peer review and, where appropriate, be published in technical and scientific journals;
- e. Support preparation of synthesis or review papers on key issues in Puget Sound;
- f. Urge the preparation of short summaries for non-technical audiences of all reports arising from Puget Sound-related research;
- g. Support the distribution and archiving of research findings by requesting the submis-

sion of all research reports to recognized repositories and by updating and managing Sound Access, a computerized bibliography of Puget Sound literature; and

- h. Publish an annual report summarizing progress on research supported by the Puget Sound Research Program and on other activities.

The Action Team shall facilitate access to information dealing with Puget Sound that is not readily available through the open literature, particularly unpublished research and data. The Action Team shall act as a broker between those having information and those needing it, including the public, the scientific community, regulatory and resource management agencies, and environmental and community groups.

### R-2. Research Reserves

Agencies, universities and other scientific organizations shall seek opportunities to identify and establish additional research reserves if specific ecosystems or reference areas are missing or underrepresented. Such reserves may be intended for research or as reference areas for monitoring. The Action Team encourages any organization active in this area to prepare an inventory of existing reserves and to share that inventory with other organizations and the research and monitoring committees established under the *Puget Sound Management Plan*.